CONSERVATISM IN THE TREATMENT OF CHRONIC ACCESSORY NASAL SINUS DISEASE WITH A REPORT OF AN ILLUSTRATIVE CASE

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THE treatment of accessory nasal sinus disease is peculiarly difficult and especially is this true in cases of pan-sinusitis for which previous operations have been attempted.

There are certain general principles formulated which one is bound to observe in all cases, but details that necessarily present themselves in individual cases have to be dealt with differently. The dissimilarity of opinion that has existed on the subject of treatment in the past few years is bound to be confusing—of course such diversity of opinion happily does not exist to such an extent to-day—and yet perhaps with regard to determining whether an operation shall be radical or whether it be conservative, opinions differ too often.

Unfortunately in so many cases the diagnosis is difficult. Although the nasal cavities are comparatively simple in anatomical arrangement, the accessory sinuses which communicate with them are always complicated, and many variations from the normal occur, and these facts must continually be borne in mind when an operation is contemplated.

Referring to the ethmoidal labyrinth, Skillern[1] says, "After persistent treatment by whatever means other than surgical if the suppuration continues, and it becomes apparent that it can only be influenced by surgical intervention, what shall this consist of; to open the lid of the ethmoid by removing the middle turbinate, or to assume the entire labyrinth should be removed and proceed to do this? Obviously the latter is preferable if we are convinced that complete exenteration is indicated, but in some cases we are by no means sure that the infection is not localized to a few cells, where it will be possible to bring about a cure, and at the same time, conserve a large portion of the ethmoidal structures."

The same thing applies in operations on the frontal sinus. If the limits of the disease can be reached by the endo-nasal route, it is no doubt the procedure to adopt. But it is thought by many that to cure a chronic frontal sinusitis and to avoid its recurrence, it is absolutely necessary to eradicate the cavity. Personally, I have not been able to depend upon x-ray findings in sinus work to determine just how much surgery should be done. Neither do I attribute this to faulty radiography. It seems to me there is a tendency to overestimate its value. For instance, how often is one deceived by x-rays of the antra? Veilings do not necessarily mean suppuration, and again, pus may be present and no shadow be seen in the plate. In this region, and in frontal sinus lesions there is no doubt, however, that the x-ray is of more value than in the ethmoids and sphenoids.

In the case I report here I was able, however, with the aid of x-rays, to determine definitely that the frontal sinus was not wholly involved. The antrum having been already operated upon, I could not gain any information about it, and as to the ethmoids and sphenoids, plates were of no assistance.

A word in conclusion as to how one is to determine when the maxillary antrum is diseased. I wish to repeat that by no means can one depend on x-ray findings. In the last year I saw an antrum opened on positive x-ray findings, and the whole of the mucous lining of the cavity was normal. Another case of my own about six months ago having definite veiling of the left maxillary sinus, when opened up proved to be a very rudimentary sinus—the cavity when located appeared to be only large enough to contain 1 cc. of fluid, but it also appeared to be normal.

As to puncture and irrigation for diagnostic purposes, men of authority and wide experience are at variance. Skillern[2] says, that puncture and irrigation should be tried first, because it frequently happens that severe forms of disease can be cured by this simple procedure alone. I

believe, however, that while this is true, yet in cases where the mucous membrane is diseased and perhaps polypoid, puncture and irrigation are of no value in establishing the diagnosis, because in many cases the washings return clear. Dutrow and Neugebauer[3] advise us to discard this method altogether, for various reasons, the chief being that it is dangerous. According to the literature, since this method has been in practice, fifteen deaths have been reported as directly due to this procedure. Hajek[4] regards the procedure of puncture and irrigation of the maxillary sinus as harmless.

I feel that when all the methods that we know of are applied to determine whether or not disease is present in the antrum and they in turn fail to convince us, that opening of the antrum by the canine route for exploratory purposes is justifiable.

Case. Miss D., who consulted me October 14th., 1922, complained of being in general ill health for the past year or more. She suffered with intense headache which was more or less constant, but attacks came on at intervals of a few days which were almost unbearable, accompanied by severe attacks of dizziness. The lips were practically never free from herpes. She herself knew the trouble to be in the nose or left antrum as she told me, and came seeking relief. The left antrum had been operated on about a year previously through the canine route, and was being irrigated almost daily through the canine tooth socket, but in spite of this her condition was getting worse.

Examination. The left side of the face was slightly swollen over the antrum and tender to the touch. Tenderness was present over upper and inner angle of the orbit (Ewing's sign). In the nose was seen a large polypoid middle turbinate, the inferior turbinate also was hypertrophic. Muco-purulent secretion was present in abundance in the middle and inferior meatus. The septum had a large spur projecting into the ethmoid region on this side too. On examining the mouth, I could see pus exuding from the tooth socket through which the irrigations were given. A probe passed through the opening readily into the antrum.

I advised operation and two days later, at the Misericordia Hospital, I resected a large polypoid middle turbinate in the manner described by Sluder[5], and curetted the anterior ethmoidal cells, enlarged the frontal sinus ostium and gently curetted to about the level of the infundibulum. She left the hospital in two days and the after treatment consisted simply of suction and irrigations on alternate days for the next three weeks. Very little difference could be seen at the end of this time in the amount of pus that was being excreted. I decided, therefore, that something further must be done and on December 16th., 1922, practically a month from the time the first operation was performed, she was readmitted to hospital. After resection of the septum I removed granulations from the anterior ethmoidal region, opened and curetted the posterior ethmoids as well as opened the sphenoidal sinus; I may say that the sphenoidal sinus was very easily opened into, I did not require to use any other instrument than a small curette, and rather think the disease had already broken through the anterior wall. In a few minutes I was able to explore the whole cavity with the same instrument, it being about the size of an ordinary hazel nut. Following this operation practically the same after treatment was instituted, the frontal sinus being irrigated daily with Dakin's solution by means of the Eustachian catheter, and perhaps not using negative pressure as often.

After a month or six weeks, decrease in the amount of discharge became noticeable. I might mention here that the antrum was being irrigated daily also, it was thought that this cavity only acted as a reservoir and therefore was left untouched but for the irrigations. Late in January of 1923, I decided the antrum should be opened, too, and very reluctantly proposed this third operation. With consent, I opened the antrum and was not altogether surprised to find the floor of the cavity quite extensively involved. Granulation and polypoid tissue was removed from around the opening into the canine tooth socket and nasal angle, the remainder of the cavity appeared to be normal and was left untouched. The usual Caldwell-Luc operation was done and the patient sent back to the ward.

Improvement went on from this gradually, and when we discontinued treatment about four months from the time of the original operation in October, 1922, there was practically no discharge from any of the sinuses. The sphenoidal sinus had granulated in and was now about half the original size—this could be seen plainly on anterior rhinoscopy. She is free from symptoms now, almost a year after the final operation and about seven months after treatment was discontinued.

Conclusions

1.—It is not always possible to determine just how much one should do in an operative way, when one begins treating cases of this particular kind—in other words, the diagnosis cannot be definitely made at the beginning.

2.—A definite knowledge of the anatomy of the accessory sinuses is essential before surgery of any description is attempted.

3.—Irrigation and puncture are a valuable aid in certain types of maxillary sinus disease only.

4.—Second only to careful operation is persistence and patience required on the part of the surgeon in following up the after treatment.

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FIXED PRINCIPLES IN THE FEEDING OF INFANTS

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SO marked and so frequent are the changes in the methods of paediatrists in artificial feeding of children, that it seems opportune to ask whether there are no general principles on which all can agree in theory, in daily practice, and in medical teaching.

The following suggestions are made not in any spirit of carping criticism of one's *confrères*, but as an attempt to find some broad principles accepted by all of us as important and practical enough to guide us in prescribing a food, and in giving to medical students a reasonable amount of uniform consistent teaching based on research confirmed by ample clinical trial. Such more or less fixed principles and truths need not check free speculation, experiment, or change in one's methods, provided there is sufficient ground for adopting better measures.

Before making suggestions let us consider some of the conflicting methods and the rapid changes in our views. Modern paediatrics was born when Paris University appointed the first Professor of Children's Diseases about forty years ago. Germany and Austria followed shortly afterwards and American universities still later founded chairs in this subject.

A broader spirit of culture, perhaps, was brought to bear upon infant's problems then than now, and the difficulties in modifying cow's milk to replace human milk were attacked from many more points of view than at present. Thus, fats, sugars, proteids and salts were all kept in mind and studied together as would seem necessary when all were being given together. All efforts were concentrated on making a food as close as possible to human milk. From a decade or two of clinical experience, combined with increasing laboratory research, it came to be taught that as the chief differences between cow's and human milk are in proteids and sugars, study should be particularly directed to these two. Now, sugar being deficient one had only to add it to a mixture to rectify this, and it was taught that when one keeps the sugar in about the same quantity as in human milk the infant has little or no disturbance from it. The results of too low or too high fat were duly observed. Salts were not disregarded but gave, it was believed, little trouble. As proteids were in excess they received most attention for many years and almost all agreed that the "tough casein curd" of cow's milk being five times more abundant than that in human milk, gave great difficulty to a feeble infant. It was while proteids were being studied that German analyses were applied, chiefly in Boston, to the problem, and it was found, in 1901, that by considering the component proteids one could imitate human milk more closely than ever before if he used whey cream and sugar. This was extensively tried and most, if not all, who gave it pronounced it a very distinct advance. In Montreal, such mixtures re-